

## **ABSTRACT**

### **EFFICIENT GRAPHICS STATE MANAGEMENT FOR ZONE RENDERING**

The present invention provides a mechanism to track and manage graphics state with hardware state-binning logic for use with the tile-based zone rendering method of generating graphical images. Only the current values of the dynamic state variables are maintained in hardware. Dynamic includes, but is not limited to, state variables that are considered likely to change between primitives. The set of dynamic state variables is subdivided into subgroups. Each state group is associated with a per-bin array of tracking bits. Whenever a state change is encountered, the tracking bit corresponding to the associated state group is set for all bins. Prior to placing a primitive in a bin, the tracking bits associated with that bin are examined, and the current state corresponding to set tracking bits is inserted in the bin before the primitive. Then the tracking bits for that bin are cleared.